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Declassification Review by NGA

R 180339Z MAY 68
FM NPIC WASHDC
TO DIA
BT

~~SECRET~~ [REDACTED] CITE NPIC 3789

ATTN: [REDACTED]
SUBJECT: EVALUATION OF GIANT SCALE MISSION S011

1. QUALITY SUMMARY: MISSION S011 PROVIDES TYPICAL IMAGE QUALITY COMPARED TO PREVIOUS GIANT SCALE MISSIONS. WHERE CLOUDS, HAZE, AND OBLIQUITY ARE NOT A DEGRADING FACTOR, THE INTERPRETATION SUITABILITY IS CONSIDERED FAIR TO GOOD. THE BEST GROUND RESOLUTIONS (ALL GROUND RESOLUTION FIGURES ARE EMPIRICAL ESTIMATES BASED ON EVALUATIONS OF SIMILAR SENSORS AND IMPLY A BAR AND A SPACE, THUS A FIGURE OF [REDACTED] OBJECT COULD BE DETECTED.) ARE LOCATED NEAR NADIR. THEY WERE DERIVED FROM THE ORIGINAL NEGATIVES AND ARE AS FOLLOWS:

- A. RIGHT OPERATIONAL OBJECTIVE CAMERA - [REDACTED]
- B. LEFT OPERATIONAL OBJECTIVE CAMERA - [REDACTED]
- C. RIGHT TECHNICAL OBJECTIVE CAMERA - NO ESTIMATE

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- D. LEFT TECHNICAL OBJECTIVE CAMERA - NO ESTIMATE
- 2. CLOUDS OBSCURE OR SEVERELY DEGRADE 80 PERCENT OF THE IMAGERY. HAZE WAS A DEGRADING FACTOR ON MOST OF THE REMAING IMAGERY.
- 3. GIANT SCALE MISSION S011 WAS FLOWN ON 28 APRIL 1968 AND WAS PROCESSED AT [REDACTED] THE MISSION EMPLOYED THE USUAL SENSORS: FIVE OPTICAL, AND INFRARED AND A RADAR. THE ONLY MATERIAL EVALUATED ARE THE PRODUCTS FROM THE OPERATIONAL AND TECHNICAL OBJECTIVE CAMERAS. THE TERRAIN OBJECT CAMERA MATERIAL WAS USED TO DETERMINE THE AREAS OF 75 PERCENT CLOUD FREE PHOTOGRAPHY.
- 4. ONLY THE ORIGINAL NEGATIVES WERE AVAILABLE FOR THIS EVALUATION:

A. TECHNICAL OBJECTIVE CAMERA MATERIAL: APPROXIMATELY 85 PERCENT OF THE PHOTOGRAPHY WAS ACQUIRED ABOVE 30 DEGREES OBLIQUITY. NO ATTEMPT WAS MADE TO DETERMINE GROUND RESOLUTIONS SINCE ALL VERTICAL FRAMES ARE SEVERELY DEGRADED BY HEAVY CLOUDS AND HAZE. THERE ARE MINUS DENSITY STREAKS SPACED 0.25 INCHES APART (ASSOCIATED WITH THE PLATEN CONFIGURATION) PARALLEL TO THE MAJOR AXIS OF THE FILM. STATIC CAN BE DETECTED ALONG BOTH EDGES OF THE MATERIAL FROM BOTH CAMERAS. BANDING, APPARENTLY INDUCED BY VIBRATION, CAN BE DETECTED THROUGHOUT THE MISSION. WHERE CLOUDS AND ATMOSPHERICS ARE NOT A FACTOR, THE

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ADVANCE CY
SANITIZED
WITH TEXT

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DENSITY AND CONTRAST OF THE NEGATIVES IS SATISFACTORY.

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(1) LEFT TECHNICAL OBJECTIVE CAMERA (AL), S/N 64-21:
THERE ARE RANDOM MINUS DENSITY STREAKS PARALLEL TO THE MAJOR
AXIS THROUGHOUT THE MISSION. A PLUS DENSITY STREAK PARRALLEL
TO THE MAJOR AXIS, 2.0 INCHES FROM THE TITLED EDGE IS PRESENT
INTERMITTENTLY THROUGHOUT THE MISSION; ANOTHER PLUS DENSITY
STREAK PARALLEL TO THE MAJOR AXIS, 20.0 INCHES FROM THE NON-
TITLED EDGE OF FILM IS PRESENT ON THE LAST 71 FRAMES. THE
DATA BLOCKS OF FRAMES 95, 139, 252, WTQN AND 413 ARE
PARTIALLY CONTAINED IN THE PRECEDING FRAMES. A CAMERA OFF/ON
WITH ASSOCIATED FOG AREAS, INDUCED BY MINOR LIGHT LEAKS, OCCURS

BETWEEN FRAMES 165/166 AND 273/274. FRAME 771 IS THE LAST
TITLED FRAME IN THE LEFT TECHNICAL OBJECTIVE CAMERA MATERIAL.

(2) RIGHT TECHNICAL OBJECTIVE CAMERA (AR), S/N 64-22:
AN ULTRA-SONIC SPLICE IS PRESENT IN FRAME 108. A CAMERA
OFF/ON WITH ASSOCIATED FOG AREAS, INDUCED BY MINOR LIGHT
LEAKS, OCCURS BETWEEN FRAMES 270/271. RANDOM PLUS DENSITY
AREAS OF IRREGULAR SHAPES CONTAINED WITHIN 1.8 INCHES OF
THE TITLED AND NON-TITLED EDGES OF THE FORMAT ARE PRESENT
ON THE LAST 71 FRAMES. FRAME 770 IS THE LAST TITLED FRAME

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OF THE RIGHT TECHNICAL OBJECTIVE MATERIAL.

B. OPERATIONAL OBJECTIVE CAMERA MATERIAL: THIS MATERIAL
PROVIDES GROUND RESOLUTIONS OF [REDACTED] NEAR NADIR AS DETERMINED FROM 25X1
CLOUD FREE PHOTOGRAPHY ACQUIRED BELOW THE NORMAL OPERATIONAL
ALTITUDES (APPROXIMATELY 70,000 FEET). THE DENSITY AND CONTRAST OF
THE NEGATIVES APPEAR SATISFACTORY. FOGGING THE THE FILM,
ASSOCIATED WITH THE ILLUMINATION OF THE DATA CHAMBER, ENCROACHES
APPROXIMATELY 0.25 INCH INTO THE IMAGERY OF ONE OR BOTH OF THE
ADJACENT FRAMES BUT THE DEGRADATION IS MINOR. THE TIME TRACK IS
IMAGED ALONG AND JUST INSIDE THE FORMAT AREA. THE LAST FRAME OF
EACH CAMERA OPERATION DISPLAYS FOGGED PATTERNS NORMALLY ASSOCIATED WITH
A CAMERA-OFF. THE FIRST 0.3 INCH OF SCAN FOR ALL FRAMES IS
SEVERELY DEGRADED AND APPEARS OUT OF FOCUS.

(1) LEFT OPERATIONAL OBJECTIVE CAMERA (CL), S/N 4033:
THE EVENTS COUNTER HAS A BIAS OF PLUS TWO WITH THE TITLED
FRAME NUMBER. THERE IS A 8.0 INCH METERED AREA (CLEAR)
BETWEEN TITLED FRAMES 0003/0004 (FIRST OPERATIONAL FRAME).
THE TIME TRACK IS NOT IMAGED FOR FRAMES 0004 THROUGH 0008,
402 AND 403. ONLY THE LAST 2.0 TO 3.0 INCHES OF THE TIME
TRACK IS RECORDED FOR FRAMES 0009 AND 0404. THE TIMING

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DOTS OF ALL OTHER FRAMES BEGIN 0.45 INCH AFTER THE START

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OF SCAN AND EXTEND 0.65 INCH BEYOND THE END OF SCAN. CAMERA OFF/ONS OCCUR BETWEEN FRAMES 0003/0004, AND 0401/0402. A MYLAR TAPE SPLICE IS MADE BETWEEN FRAMES 522/523. THE LSAT TITLED FRAME IS 762.

(2) RIGHT OPERATIONAL OBJECTIVE CAMERA (CR), S/N 4032: THE EVENTS COUNTER HAS A BIAS OF MINUS THREE WITH THE TITLED FRAME NUMBER. THE TIME TRACK IS NOT IMAGED FOR FRAMES 0004 THROUGH 0013, THE FIRST 8.5 INCHES OF FRAME 0014 AND THE FIRST 1.5 INCHES OF FRAME 0425. THE TIMING DOTS OF ALL OTHER FRAMES BEGIN 0.55 INCH AFTER THE START OF SCAN AND EXTEND 0.90 INCH BEYOND THE END OF SCAN. THE FIRST THREE TITLED FRAMES ARE BLANK AND APPEAR TO BE PART OF THE PRE-FLIGHT MATERIAL. CAMERA OFF/ONS OCCUR BETWEEN FRAMES 0003/0004 AND 0424/0425. EDGE FOG OCCURS INTERMITTENTLY ALONG THE NON-TITLED EDGE OF THE FILM. THE ENTIRE MISSION CONTAINS SUBTLY PLUS DENSITY STREAKS, EACH APPROXIMATELY 0.1 INCH WIDE, 1.00 AND 2.25 INCHES FROM THE TITLED EDGE OF THE FILM. A MINUS DENSITY DOT OCCURS EACH 1.51 INCHES AND 0.53 INCHES FROM THE TITLED EDGE OF THE FILM THROUGH-

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OUT. A NARROW GROUP OF FIVE MINUS DENSITY STREAKS IS PRESENT 6.0 INCHES FROM THE START OF SCAN ON FRAME 0025. THESE ARE PARALLEL TO THE MINOR AXIS AND EXTEND FROM EDGE TO EDGE OF THE FILM. BANDING, PARALLEL TO THE MINOR AXIS, IS PRESENT ON APPROXIMATELY THE FIRST 3.0 INCHES OF EACH FRAME FROM 786 THROUGH 797 (LAST FRAME).

5. MISSION RECORDER SYSTEM (MRS) CORRELATION:

A. TECHNICAL OBJECTIVE CAMERAS: THE FIRST THREE FRAMES OF BOTH TECHNICAL OBJECTIVE CAMERAS ARE PRE-FLIGHT FRAMES AND CORRELATE WITH THE FIRST THREE LINES OF DATA IN MRS. THERE IS A BIAS OF PLUS 16 MINUTES, 20 SECONDS IN THE MRS OVER THE TIME RECORDED ON THE FILM OF FRAME 4 OF THE LEFT TECHNICAL OBJECTIVE CAMERA. A CAMERA-OFF OCCURS AFTER FRAME 273, WHERE THE TIME BIAS IS 16 MINUTES, 19 SECONDS. AFTER THE CAMERA-ON AT FRAME 274, THERE IS NO CORRELATION WITH THE MRS DATA. THE TIME FOR FRAME 274 DOES CORRESPOND WITH THE MRS TIME. THE DEPRESSION ANGLE ON THE FILM DOES NOT CHANGE DURING THE REMAINDER OF THE MISSION, THEREFORE THERE IS NO ACCURATE CORRELATION AFTER THE CAMERA-ON. THE TIME BIAS BETWEEN FILM TIME AND MRS TIME AFTER FRAME 282 IS 16 MINUTES, 4 SECONDS.

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THE BIAS ON THE RIGHT TECHNICAL OBJECTIVE CAMERA DRIFTS FROM PLUS 35 SECONDS ON FRAME 4 TO A PLUS 43 SECONDS AT THE CAMERA-OFF (FRAME 270). THE MRS DATA FOR FRAMES 271 TO 280 ARE ERRONEOUS LINES. FROM FRAME 286 TO THE END OF THE MISSION,

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THE BIAS DRIFTS FROM PLUS 29 TO PLUS 37 SECONDS.

B. OPERATIONAL OBJECTIVE CAMERAS: A POOR CORRELATION WAS ACHIEVED. THE FIRST THREE FRAMES OF BOTH CAMERAS AND THE FIRST THREE LINES OF THE MRS ARE PRE-FLIGHT. THE TIME BIAS FOR THE LEFT OPERATIONAL OBJECTIVE CAMERA DRIFTS FROM A PLUS 15 SECONDS IN THE MRS TO A MINUS 39 SECONDS FOR THE CAMERA-OFF (FRAME 401). THE DATA LINES FOR FRAMES 402 TO 421 ARE ERRONEOUS. THE TIME BIAS FOR THE REMAINDER OF THE MISSION IS BETWEEN A MINUS 25 SECONDS AND A MINUS 21 SECONDS. THE TIME BIAS FOR THE RIGHT OPERATIONAL OBJECTIVE CAMERA DRIFTS FROM A MINUS 2 SECONDS AT FRAME 4 TO A MINUS 13 SECONDS FOR THE CAMERA-OFF (FRAME 424). THE DATA LINES FOR FRAMES 425 TO 439 ARE ERRONEOUS. THE TIME BIAS FOR THE REMAINDER OF THE MISSION IS BETWEEN MINUS 36 SECONDS AND A MINUS 39 SECONDS.

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END OF MESSAGE